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Case Report

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Giant mobile thrombus in left atrium

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ABSTRACT

Giant mobile left atrial thrombus has a rare occurrence. Rheumatic mitral valve stenosis (RMVS), which is frequently seen in developing countries, atrial fibrillation, and left atrial dilatation contribute to faster and higher volume thrombus formation. A 46-year-old female suffering from dyspnea was admitted to the cardiology outpatient. Transthoracic and transesophageal echocardiography confirmed rheumatic mitral stenosis with 3.5x 2.5 cm mobile circulating thrombus in left atrium. The patient underwent successful surgical thrombus removal, prostatic mitral valve replacement, and surgical ligation of the left appendage.

Keywords: Left atrial thrombus, rheumatic mitral valve stenosis, atrial fibrillation

INTRODUCTION

We often see left atrium thrombus formation in the left atrial appendage, and the most obvious etiology is atrial fibrillation.[1] Atrial fibrillation may be caused by valvular causes, especially mitral stenosis, or by non-valvular causes such as diabetes mellitus, heart failure, advanced age, alcohol and smoking.[2] Giant mobile left atrial thrombus has a rare occurrence. In addition to rheumatic mitral valve stenosis (RMVS), which is frequently seen in developing countries, the presence of atrial fibrillation also contributes to faster and higher volume thrombus formation.[3] Herein, we report a case with left atrial giant mobile thrombus due to RMVS.

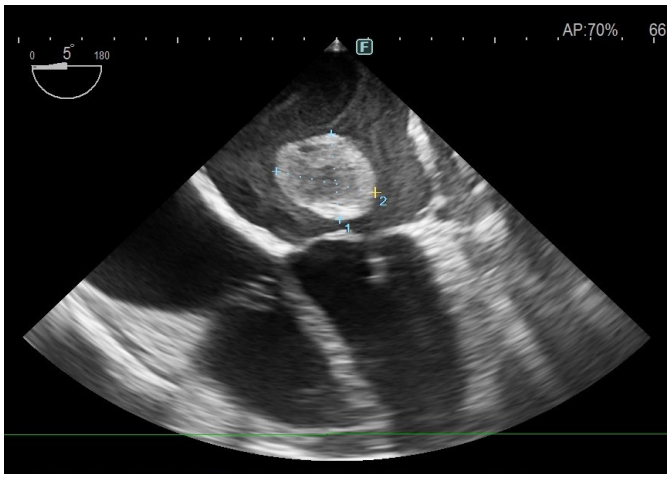
CASE

A 46-year-old female suffering from dyspnea was admitted to the cardiology outpatient clinic. She has no history of hypertension, diabetes mellitus, dyslipidemia or previous cardiac history. She had mild dyspnea for exercise for 3 months ,however dyspnea got worse in the last 3 days.

General examination was unremarkable. ECG showed atrial fibrillation without any ischemic ST/T wave changes. CK-MB, Troponin, and other hematological parameters were within normal limits.

2D Echocardiography showed: rheumatic mitral stenosis with maximum gradient of 19 mmHg and mean gradient of 9 mmHg and second degree aortic regurgitation. There was a mobile thrombus wandering in the left atrium (3.5× 2.5 cm). Third degree tricuspid regurgitation and minimal pericardial effusion were also observed.

The systolic pulmonary pressure was measured as 60 mmHg. Transesophageal echocardiography showed spontaneous echo contrast with 3.5x 2.5 cm mobile circulating thrombus in left atrium (Figure 1, Video 1). There was also extensive thrombus burden in left atrial appendage.



The patient was admitted to cardiology clinic and surgery was planned. The coronary angiography did not show any significant coronary artery disease. The patient underwent surgical thrombus removal, prostetic mitral valve replacement, and surgical ligation of the left appendage. Recovery was uneventful and she was discharged a week latter with medical therapy including warfarin.

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DISCUSSION

Rheumatic heart disease, in which the mitral valve in mostly affected, remains the leading cause of cardiovascular mortality in children and young adults in developing countries, with an estimate of approximately 375,000 deaths per year in 1990 and 320,000 deaths in 2015.[4] With progressive dilatation of the left atrium, spontaneous echo contrast, and RMVS, the tendency to thrombus formation significantly increases. The risk of LA thrombus formation in moderate-severe RMVS patients is around 17%, and this rate doubles when AF is accompanied.[5,6] In our case, the absence of any known cardiac history, presence of LA dilatation, intense spontaneous echo contrast, accompanying AF, and the lack of anticoagulant use for AF created a highly prone situation for thrombus formation.

In the differential diagnosis of intracavity cardiac mass, thrombus, myxoma, lipoma and non-myxomatous neoplasm should always be kept in mind.[7] However, in our patient, we prioritized thrombus due to the predisposing factors we mentioned before and the imaging findings. Since intense thrombus was observed in the LAA, we hypothesized that the thrombus in the LAA grew considerably and then broke off, becoming free in the LA.

In patients with RMVS, the symptom status of the disease, atrial fibrillation, pulmonary artery pressure, and, rarely, the presence of free mobile thrombus with a high risk of systemic embolism, as in our patient, are the main factors that determine the type of treatment.[8] Mitral valve balloon valvuloplasty and surgery are the two main treatment options for RMVS, but in our patient, we preferred emergency surgery due to high burden of LAA thrombus and mobile large thrombus with high risk of embolism in the LA.

CONCLUSION

In countries where the prevalence of rheumatic valve disease is relatively high, large mobile LA thrombi may rarely be found on transthoracic echocardiography in RHD cases without any history. Since there is a significant risk of mortality and morbidity, diagnosis and treatment in a timely manner is very important.

ETHICAL DECLARATIONS

Informed Consent

Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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